

## Pertinent Aeromedical Clinical References

### Introduction

As a flight provider, you will have to make recommendations to the local unit Commander on the aeromedical fitness of aircrew members. You will have to know the aeromedical evaluation requirements and standards in order to make these decisions. If aircrew members do not meet aeromedical standards, you need to know the aeromedical implications of these conditions, if these conditions can be waived, the information required to request waivers, and the follow-up information required if a waiver is granted.

This lesson discusses aeromedical clinical references that provide current guidance for aeromedical fitness recommendations. These references have been developed updated by senior aeromedical personnel with final approval through the Office of the US Army Surgeon General for the ARs and through the Commander, USAAMC for the ATBs and APLs. Website locations are provided for you to obtain the most current versions of these references. We recommend that you make a personnel electronic download aeromedical reference library on your computer's hard drive along with a portable backup.

### After completing this lesson...

#### You will be able to:

- Find the aeromedical Army's standards in order to make sound recommendations on aircrew members' qualification and fitness for flight duty.
- Cite the aeromedical authority's instruments and tools that ensure an army-wide aeromedical standard.
- Find current APLs and ATBs online.
- Identify the new or updated APLs and ATBs.
- Identify the specific changes of each condition.

## Pertinent Aeromedical Clinical References

### What are the pertinent aeromedical clinical references?

- [Army Regulation 40-501 \(AR40-501\)](#)

#### **AR 40-501, Standards of Medical Fitness (Effective date: 10 September 2008):**

- Chapters 4 and 6 of this regulation have been developed by USAAMA and staffed through the USAAMC Commander and Aeromedical Consultant to the OTSG; however, the OTSG retains final approval authority.
- The USAPA is responsible for maintaining and updating the approved published versions on their [website](#):
- This regulation covers medical standards for all Army personnel. A FS/APA should be familiar with all of the content.

- However, as a FS/APA, you will be considered the subject matter expert for the most “aeromedically specific” chapters, Chs.4 and 6.
- These chapters apply to any aircrew member performing aviation duties in DA aircraft or aircraft leased by the DA, and for ATCs working in Army ATC facilities.

#### **Ch.4, Medical Fitness Standards for Flying Duty:**

- Lists medical conditions and physical defects that are causes for rejection in selection, training, and retention for aviation duties
- States that a failure to meet medical standards for flying duties remains disqualifying until reviewed by the appropriate Aviation Medicine Approving Authority

#### **Ch.6, Aeromedical Administration:**

- Lists administrative policies for completing the Army FDME, Aeromedical Summaries (AMSs), and [DA Form 4186](#)
- States the procedure for the review and disposition of aeromedically qualified and disqualified aircrew and ATCs.

- [Army Regulation \(AR 40-8\)](#)

#### **AR 40-8, Temporary Flying Restrictions Due to Exogenous Factors, (16 May 2007):**

- This regulation has been developed by US Army Safety Center Surgeon and staffed through USAAMA, the USAAMC Commander, and the Aeromedical Consultant to the OTSG; however, the OTSG retains final approval authority.
- The USAPA is responsible for maintaining and updating the approved published versions on their [website](#).
- This regulation covers “exogenous factors,” activities that can have considerable effects on aircrew in the aviation environment, which would normally have negligible effects on the body.
- The following are the current specified temporary (as opposed to permanent) exogenous factors that are aeromedically disqualifying conditions
- **Note:** APLs have been developed for permanently disqualifying conditions and to clarify or modify policy on some temporary conditions (e.g. medications, specific immunizations, decompression sickness, smoking cessation, etc.):

#### **Ch.4, Temporary Exogenous Factors:**

- [Administration of drugs](#)
- [Immunizations](#)
- [Blood donation](#)
- [Decompression experience](#)
- [Diving](#)
- [Tobacco smoking](#)
- [Strenuous sporting activities](#)

**Ch.5, Optic Devices:**

- Corrective lenses to provide 20/20 or better, near and far vision bilaterally
- Contact lens restrictions (unless waived)

- [Aeromedical Technical Bulletins \(ATBs\)](#)

#### **Aeromedical Technical Bulletins ([ATBs](#)):**

- These bulletins have been developed by USAAMA and staffed through the ACAP and Aeromedical Consultant to the OTSG; however, the USAAMC Commander retains final approval authority.
- USAAMA is responsible for maintaining and updating the approved published versions on their [website](#).
- This collection of bulletins standardizes “how to” correctly perform testing or tasks specific to the aviation medicine program.
- [The Administrative Guide](#), a separate bulletin, consolidates the essential aeromedical elements of the ARs, APLs and ATBs and provides guidance on how to conduct and apply aeromedical evaluations and dispositions.
- It contains convenient charts of required tests and associated aeromedical standards, explains the intent of regulations and policies, describes how to accurately complete FDMEs, AMSs and DA 4186s, and establishes the processes for making aeromedical dispositions.
- Other ATBs currently available describe how to do optometric exams and aviation specific exams as listed below.
- It is important to check the USAAMA website for the most current ATBs, since they are frequently developed or updated to expeditiously reflect advances in the aerospace medicine field:

#### **Aeromedical Technical Bulletin (ATB) Updates**

As the US Army Aeromedical Activity (AAMA) updates, creates or deletes ATBs, they post them on their [website](#). It is important that you visit this site frequently to remain current in your aeromedical practices. The following are highlights of changes from the last couple years.

#### **What are the new and updated APLs and ATBs?**

As of 2010, there have been many new or updated APLs and ATBs. They should be downloaded onto your desktop or documents for easy access.

- [Aeromedical Policy Letters \(APLs\)](#)

### **Aeromedical Policy Letters ([APLs](#)):**

- These policy letters have been developed by USAAMA and staffed through the ACAP and Aeromedical Consultant to the OTSG; however, the USAAMC Commander retains final approval authority.
- USAAMA is responsible for maintaining and updating the approved published versions on their [website](#).
- Army Policy letters are guidelines, interpretations and elaborations on the physical standards listed in AR 40-501, which were developed to standardize evaluation, treatment, disposition, and the waiver process for aircrew Army-wide.
- It is important to check the USAAMA website for the most current APLs, since they are frequently developed or updated to expeditiously reflect advances in the aerospace medicine field.

### **Where can I find current [APLs and ATBs online?](#)**

#### **Viewing the APLs and ATBs:**

- USAAMA website
- The AERO homepage
- USASAM website

## **APL Categories**

### **APL Categories**

The major categories of APLs are listed below:

- Cardiovascular
- Dermatology
- Endocrinology
- Gastroenterology
- Hematology
- Infectious Diseases
- Malignancy
- Medication
- Miscellaneous
- Neurology
- Obstetrics & Gynecology
- Ophthalmology

### **Online APLs and ATBs**

**What are the new and updated APLs and ATBs?** From 2001 to 2010, there have been numerous dates. They include:

- Hypertension
- Hyperlipidemia
- Abnormal Pap Smears
- Cardiovascular screening program
- Coronary artery disease
- Abnormal cardiac function testing
- HIV, hepatitis
- Refractive eye surgery and surveillance program
- Allergic/non-allergic rhinitis
- Medications, renal stones

- Orthopedic
- Otorhinolaryngology
- Psychiatric
- Pulmonary Disease
- Urology
- Endocrine
- Headache/migraine
- Overweight
- Contact lens wear
- Dermatology
- Gastroenterology
- Alcohol misuse
- Herbals/supplements

### **Where can I find Aeromedical Policy Letter updates?**

As the US Army Aeromedical Activity (AAMA) updates, creates or deletes APLs, they post them on their [website](#). It is important that you visit this site frequently to remain current in your aeromedical practices. The following are highlights of changes from the last couple years.

**Specific Policy Changes: The following reflect changes that have occurred since 2001. More updates will be released on line by the end of summer 2010.**

### **What specific policy changes have been made regarding each condition listed?**

- Hypertension
  - Aggressive Primary Prevention
  - Use of ARBs approved
  - CXR and slit-lamp exam for initial evaluation deleted
  - No mandatory 30 day grounding for medications- observe for SE and FFD when stable and BP trends appropriately
  - Goal – treat borderline cases and aggressively use medications to prevent sequelae
- Hyperlipidemia (HLD)
  - Definition of HLD, Total Chol >255 not 270
  - Expansion of statin class
  - Change to requirements for lab f/u
  - Do not wait until age 40 to start treating HLD!
  - Aggressive primary prevention to prevent CAD
  - Initiating medications- ground for sufficient period to observe for side effects before local flight clearance.
- Abnormal Pap Smears
  - NO longer required for initial flight PE- all classes

- Revised to reflect Bethesda Classification
- ASCUS & LGSIL- treat locally- IO
- HGSIL and CIS- treat & submit for waiver
- Coronary Artery Disease
  - 3 year f/u with cardiology and either Thallium GXT, Stress Echo or EBCT
  - No required follow-up cardiac catheterization unless clinically indicated
  - Follow-up catheter requirements determined by changes in condition or on f/u testing.

- Cardiovascular Screening Program

Four distinct levels:

Level 1- Risk Factor Assessment

- LDL >190 preferred over use of Total Cholesterol >255.
- Ratio and FRI criteria unchanged

Level 2- AGXT or EBCT

- Cardiac Fluoroscopy Deleted
- Abnormal EBCT- Calcium Score >400

Level 3- Noninvasive

- Thallium GXT (Preferred) or Stress Echocardiogram
- 24 hour Holter and Echocardiogram Deleted

Level 4- Invasive

- Cardiac Catheterization
- Proceed to level 4 only after review with AAMA

- Abnormal Cardiac Function Testing

- Delete Cardiac Fluoroscopy
- Add EBCT
- Only submit copies of final reports to AAMA
- Do not send complete tracings or films/CD!
- AAMA will request full reports if required

- HIV

- No change to waiver policy
- Updated to reflect current clinical guidelines
- Hepatitis
  - Hepatitis A & B
    - Unchanged
  - Hepatitis C
    - Guidelines for evaluation and follow-up included
    - Evaluation can be done by any GI specialist
    - Mandatory grounding for treatment
- Refractive Surgery
  - Class 1A, 1W, and 2- must be enrolled in studies to obtain ETP or Waiver.
  - Class 2F, 3, and 4- can apply for waiver for LASIK/PRK. Reviewed on case-by-case basis
  - Multiple criteria and information required for ETP/Waiver-details in APLs.
  - Study Acceptance does not guarantee a qualified FDME or acceptance into flight training.
- Allergic and Non-allergic Rhinitis
  - IO-mild cases with sxs < 30 days/yr on specified treatments.
  - Rated aircrew-waiver if sxs > 30 days/yr or need immunotherapy or chronic non-sedating antihistamine.
  - AMS- No longer require: sinus x-ray, nasal smears, blood eosinophil counts.
- Medications
  - Additions of ARBs for HTN, COX2s for analgesia.
  - Metformin now can be used for Class 2F, 3, and 4 aircrew with waiver.
  - Intranasal steroids, anticholinergics or cromolym sodium now class 2B
- Renal Stones
  - APL lists indications and use of CT scans to guide f/u for retained stones.
  - Renal stone worksheet only requires one set of blood chemistries vs. three.
  - Other lab requirements for initial waiver submission-unchanged.
- Hypo/hyperthyroidism



- Both conditions can be submitted for waiver/ETP once euthyroid and no eye issues.
- F/U labs required with each comprehensive FDME, but recommend FS/APA assess annually
- Diabetes Mellitus and Pre-diabetes
  - Medications for rated aviators- case-by-case basis.
  - Rare waiver.
  - Metformin for Class 2F, 3, and 4 aircrew.
  - Oral Hypoglycemics extended to include class 2F, and 4.
- Headache/Migraine
  - History is key in determining classification.
  - Waiver is dependent on triggers, chances of recurrence, and affects on performance.
- Smoking Cessation
  - Use of Zyban as Information Only.
  - Many caveats to safe use, listing in APL.
  - Grounding mandatory for first two weeks of use, then at discretion of FS/APA.
  - Usual treatment course 8-12 weeks.
  - Best if used in conjunction with a formal program.
- Overweight Aircrew
  - 250 lb rule is gone.
  - Search for underlying disorders.
  - Safety focus- wear of equipment, access/egress, flight control manipulation.
  - FS/APA assists Command with provisions of AR 600-9- an administrative not aeromedical program.
- Contact Lens Wear
  - Wear allowed for all classes as Information Only
  - Must meet visual standards and have initial and annual f/u evaluations.
  - Evaluations:
    - Current contact lens parameters
    - Visual acuity near and far with lens wear
    - SLE
    - Complications of wear
- Atopic Dermatitis

- Mild to moderate cases-Information only.
- Expand treatments to include tacrolimus ointment.
- Use of intermediate or high potency topical steroids or oral meds is DQ.
- Dermatophytosis of the Nail
  - No longer recommend use of Griseofulvin.
  - Itraconazole and terbinafine are OK for short-term use, pulse therapy is recommended and aircrew must be grounded during the treatment.
  - Follow-up: monthly LFTs: itraconazole, LFTS and CBC: terbinafine.
  - Ciclopirox topical 8% (PENLAC) OK for chronic use.

- Psoriasis

Additions to authorized treatments:

- Vitamin D analogs: Calcipotriene
- Topical retinoid: Tazarotene

- GERD

ETP or Waiver required only if condition associated with the five warning symptoms:

- Dysphagia or odynophagia
- Sxs persistent or progressive on chronic therapy
- Bleeding or iron deficiency
- Unexplained weight loss
- Other extraesophageal symptoms
- Other cases Information Only

- PUD

- Impact of H. Pylori treatment for cure
- Follow-up- only if symptom recurrence
- ETP for single episode may be considered

- Ulcerative Colitis

- Addition of Mesalamine to authorized medications

- Crohn's Disease

- Addition of Mesalamine to authorized medications.
- Information required includes radiologic reports and CBC/ESR.

- Alcohol Related Disorder, NOS (Alcohol Misuse)
  - Single episode- Information Only
  - Requires evaluation by ASAP to ensure no underlying problem
  - Multiple Episodes require additional evaluation per APL
  - Considered on case-by-case basis
  - Cycloplegic Refraction:
    - Hyperopia- no more than +3.00 in each eye
    - Myopia- no more than -1.50 in each eye
    - Astigmatism- no more than +/-1.00
- Herbals/Supplements
  - New Policy
  - Aligned with Class 1,2 and 3 medication classes
  - Any substance not listed is prohibited- individuals can request waiver for other preparations via FS/APA
  - Remember to assess for the underlying medical problem individual is treating
  - Evolving area- use references and give feedback to AAMA
- Herbals/Supplements- Class 1
 

No FS approval but report with annual FDME:

  - MVI/Mineral tablets qd
  - Vitamins C, E, B6, B12 (oral)
  - Calcium, Folate
  - Protein Supplements- shakes, capsules, and nutritional bars
- Herbals/Supplements-Class 2
  - Vitamins A, K, D, Niacin, Riboflavin, Thiamine
  - Magnesium, Zinc, Chromium, Selenium, Copper
  - Glucosamine with or without Chondroitin
  - Echinacea for less than two weeks use
  - Saw Palmetto, Creatine
  - Ginseng- prohibited 24 hrs before flight
- Herbals/Supplements-Class 3
  - All other preparations not specifically listed are disqualifying for flight duties.
  - Waivers can be requested- unlikely.